

WHAT IS CLAIMED IS:

1. A process for producing propylene in a reactor comprising a first zone positioned upstream from a second zone comprising the steps of:
 - (a) in said first zone, contacting a carbonaceous feed having a boiling point greater than about 180°C with a catalyst comprising a crystalline zeolite having an average pore diameter less than about 0.7 nm, thereby forming a pre-coked catalyst; and,
 - (b) in said second zone, contacting a naphtha feed containing between about 10 and about 30 wt.% paraffins and between about 15 and about 70 wt.% olefins with said pre-coked catalyst to form a cracked product, the reaction conditions including a temperature from about 500° C to 650° C, a hydrocarbon partial pressure of 10 to 40 psia, a hydrocarbon residence time of 1 to 10 seconds, and a catalyst to feed ratio, by weight, of about 4 to 10, wherein no more than about 20 wt.% of paraffins are converted to olefins and wherein propylene comprises at least 90 mol.% of the total C₃ products.
2. The process of claim 1 wherein the crystalline zeolite is selected from the ZSM series.
3. The process of claim 2 wherein the crystalline zeolite is ZSM-5.
4. The process of claim 3 wherein propylene comprises at least 95 mol.% of the total C₃ products.
5. The process of claim 3 wherein the reaction temperature is from about 500° C to about 600° C.

6. The process of claim 3 wherein at least about 60 wt.% of the C₅ + olefins in the feed are converted to C₄- products and less than about 25 wt.% of the paraffins are converted to C₄- products.
7. The process of claim 6 wherein propylene comprises at least about 90 mol.% of the total C₃ products.
8. The process of claim 7 wherein the weight ratio of propylene to total C₂-products is greater than about 3.5.
9. The process of claim 8 wherein the weight ratio of propylene to total C₂-products is greater than about 4.0.
10. The process according to claim 1 further comprising the step of separating the propylene from the cracked product and polymerizing the propylene to form polypropylene.
11. A process for producing propylene comprising the steps of:
- contacting
- (i) a naphtha feed containing between about 10 and about 30 wt.% paraffins and between about 15 and about 70 wt.% olefins, and
- (ii) a carbonaceous feed having a boiling point greater than about 180°C
- with a catalyst to form a cracked product, the catalyst comprising a crystalline zeolite having an average pore diameter less than about 0.7 nm, the reaction conditions including a temperature from about 500° C to 650° C, a hydrocarbon partial pressure of 10 to 40 psia, a hydrocarbon residence time

of 1 to 10 seconds, and a catalyst to feed ratio, by weight, of about 4 to 10, wherein no more than about 20 wt.% of paraffins are converted to olefins and wherein propylene comprises at least 90 mol.% of the total C₃ products.

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- 5 12. The process of claim 11 wherein the crystalline zeolite is selected from the ZSM series.
13. The process of claim 12 wherein the crystalline zeolite is ZSM-5.
14. The process of claim 11 wherein propylene comprises at least 95 mol.% of the total C₃ products.
- 10 15. The process of claim 13 wherein the reaction temperature is from about 500° C to about 600° C.
16. The process of claim 15 wherein at least about 60 wt.% of the C₅ + olefins in the feed is converted to C₄- products and less than about 25 wt.% of the paraffins are converted to C₄- products.
- 15 17. The process of claim 16 wherein the weight ratio of propylene to total C₂-products is greater than about 3.5.
18. The process of claim 17 wherein the weight ratio of propylene to total C₂-products is greater than about 4.0.
- 20 19. The process of claim 11 further comprising the step of separating the propylene from the cracked product and polymerizing the propylene to form polypropylene.